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SALICYLIC ACID AND SODIUM SALICYLATE.

BY E. H. CONE, P.D.

Salicylic acid and sodium salicylate have come into prominence of late years as specifics for the treatment of rheumatism. Their introduction was followed by reports of cases of remarkable recovery; but immediately following these reports came reports of less favorable nature: gastric disturbance, cardiac depression and irritation of the kidneys accompanied their use in certain cases. These unfavorable symptoms were found to be due to the impurities contained in the synthetic salicylic acid.

Dr. Latham, of Cambridge, in the Croonian Lectures for 1886, thus formulated a rule for the administration of salicylic acid in the treatment of acute rheumatism: "The true salicylic acid from the vegetable kingdom must alone be employed. If you have to give large doses, avoid giving the artificial product from carbolic acid, however much it may have been dialyzed and purified. An impure acid will quickly produce symptoms closely resembling delirium tremens."

Dr. H. M. Lyman, at a meeting of the Chicago Society of International Medicine and Chicago Medical Society, in the course of his remarks gave the following early experiences which he had in the use of salicylic acid and salicylate of sodium. When on duty as attending physician in Cook County Hospital, at the time when rheumatism was treated with large doses of alkaline salts given on the hypothesis that there was an excess of acid in the blood and circulating fluids of the body, and by the administration of alkalies it was thought that these could be neutralized, he read of the dis-

covery of a new agent for the treatment of rheumatism that was called salicylic acid. It was being reported by German physicians that it was an agent with remarkable and undoubted power to relieve the symptoms of acute articular rheumatism. After considerable time and effort, he succeeded in securing a quantity and prescribing it, certainly for the first time in any of the public hospitals of Chicago, and the first time in his own practice. The effect was wonderful. In three days patients who previously would lie weeks and weeks in a state of perspiration and suffering, requiring Dover's powders at night, were sufficiently relieved from pain to sleep. Opiates were withdrawn entirely. Under the influence of this remedy, in three days' time these patients would be out of bed, walking around, asking to be allowed to return home. But in a few days he found that the patients thus cured, who went home, were brought back to the hospital again. Physicians had not yet learned that it is necessary to continue treatment, even after the relief of the pain and disappearance of the swelling that affected the joints, one of the facts which goes to prove that the disease does not consist merely of a painful swelling; it is a disorganization of the joints of a more serious nature than mere local tenderness, and it is very essential to continue the administration of salicylic acid for two or three weeks after the relief of the pain. It was not long before it was learned by experimentation that the salts of salicylic acid were even better and a more convenient means of medication than the salicylic acid itself. Then it was not long before it was found that patients did not do as well with the salicylates prepared in this country as they did with those prepared in Germany. For a considerable time disagreeable results followed the use of sodium salicylate prepared in America. It was impure; it deteriorated with keeping; it did not produce the effects that were secured from the original German article.

One day he was called to see a young man suffering from acute articular rheumatism, and prescribed sodium salicylate. The patient took it according to direction, and having taken it for three days, he went to the house on the morning of the third day of his illness, was met by the mother with an expression of horror, who said: "I was not aware that my son was such a boy; that he ever touched liquor of any kind; he has got delirium tremens;" and, in fact, he presented the symptoms. There were delirium, picking of the

clothes and tremor, all the classic symptoms of the disease, but it was sodium salicylate which had produced the effect. Withdrawing the drug and allowing its effects to pass off, the delirium disappeared, and the mother was intensely relieved.

At a meeting of the Section on General Medicine of the New York Academy of Medicine, the scientific business of the evening consisted of a Symposium on Articular Rheumatism. Dr. Simon Baruch said that to get the effect from the salicylates without their inconveniences, pure salicylic acid should be used; only that derived from the oil of gaultheria should be employed. With this Dr. Baruch gives 10 grains of sodium bicarbonate, making an extemporaneous sodium salicylate. He gives 20 grains at about 4 in the afternoon, and the same dose at 6, 8 and 10, until the patient has taken 80 grains. The tendency to salicylism is slept off, though the ears may ring until about noon the next day. Compresses of cool water give comfort to the joints. If the temperature be high, water should be used abundantly.

Dr. Abraham Meyer thinks that only the salicylic acid from genuine oil of wintergreen should be used. There are two other kinds of salicylates, the synthetic and that made from synthetic oil of wintergreen. These cause disturbance of the stomach and delirium.

An examination of the oils of wintergreen, salicylic acid and sodium salicylate upon the market has brought out the fact that there is a wide range of quality, and no doubt the contradictory reports of clinical observations can be attributed to the source, viz. an impure article.

We are indebted to M. Charteris, M.D., Dr. MacLennan and Professor Dunstan for the careful, painstaking and impartial manner with which they have investigated the chemical composition and reported the therapeutic value of this complex subject.

To briefly summarize the first experiments which M. Charteris, M.D., carried on with Dr. MacLennan, a 10-grain dose of the artificial salicylic acid and 18-grain dose of the artificial sodium salicylate were sufficient to cause the death of a rabbit weighing $2\frac{1}{2}$ to 3 pounds, while natural salicylic acid with its salt of sodium in proportionate doses caused no bad results. The deductions from these experiments indicated that artificial salicylic acid and its sodium salt were dangerous to animal life, while natural salicylic acid and its sodium salt were not.

Further, it was shown that the difference was due to an impurity in the artificial acid—not a trace of which existed in the natural salicylic acid. Dr. Charteris from these experiments concluded that artificial salicylic acid contained an impurity or impurities, and that until this or these could be extracted by the aid of chemistry, the internal administration of the acid or its salt should be discountenanced. Large and repeated doses of the sodium salt were necessary in the treatment of acute rheumatism, and hence the restlessness, the confusion and the delirium attendant at times on their use. He observed that the retarded convalescence also, which occurred in some cases of acute rheumatism after the salicylate treatment, was due in all probability to the great and protracted prostration to which the impurity gave rise. In connection with these symptoms it was noted that prescriptions for the salicylate of sodium were invariably made up—unless otherwise indicated—from the artificial and not the natural salt. In a paper read before the Royal Medico-Chirurgical Society, Dr. Charteris's attention was called to a method of purifying salicylic acid by the late M. Williams, and following along lines laid down by M. Williams an acid was made by repeated crystallization from water instead of rectified spirit, and an artificial acid was obtained identical in its chemical form, its solubility, its melting-point and its physiological action with that of the natural acid. It was also shown that if the form, the solubility and the melting-point varied from that of the natural, no uniform physiological result could be obtained.

In October, 1890, Professor Dunstan sent Dr. Charteris a sample of artificial salicylic acid and samples of these substances extracted, labeled O-acid, P-acid and M-acid, the several creosotic acids. These were examined in their physiological action by dissolving 2 grains in rectified spirit and injecting into a rabbit weighing $1\frac{1}{2}$ pounds. The O-acid produced death in thirty hours, the P-acid in forty-two hours, while the M-acid did not produce any unhealthy action.

The results of these investigations proved that an impurity existed in the artificial acid that was a poison, and that poison was not found in the acid from vegetable origin. We are therefore interested in securing a source from which a pure acid and its salts can be made, and we find in oil of wintergreen such a source. At present a very large percentage of the oil of wintergreen on the market is adul-

terated mostly with the synthetic methyl salicylate, and this adulteration has been of the most difficult to detect, possessing, as it does, about the same chemical composition and with physical characteristics nearly identical. At one time it was possible to obtain this oil from the distillers direct, without any fear of sophistication; but at present, especially in Pennsylvania, the distillers themselves are adulterating their product before shipment, and large consumers of this product have been compelled to withdraw from this source of supply and now buy in other localities.

Very ingenious means are employed both by jobbers and distillers to deceive the consumer. For instance, they will furnish several shipments of a high grade of oil of wintergreen at a low price; then follow with shipments of an oil that is shamefully adulterated, and it can be readily seen the source of profit if such methods are successful. At present, the lowest price at which the true oil of wintergreen from the wintergreen leaves is sold is \$2.25 per pound. The true oil from birch is \$1.90, while the synthetic oil is easily procured at 42 cents, and so-called "true oils" can be purchased at almost any price, depending upon the amount of adulteration. To show the inconsistency of prices sometimes offered, I relate an experience of a large buyer. This gentleman, at one time, held two letters, one from a prominent jobber of New York offering a distiller of this oil \$2.25 per pound for his product, and the other, an offer from the same jobber to this gentleman to supply an oil of wintergreen "guaranteed strictly pure natural" at \$1.75. The price asked for true oil of wintergreen is not always a criterion of its purity, and it is necessary to employ such tests as prove the absence or presence of adulterants; but at the same time it is out of the question to suppose that a pure product either in the oil, acid or sodium salt can be obtained at a price which is below the first cost of the true oil or cost of manufacture from such an oil, which is at times as high as \$2.50 a pound. It must be admitted, however, that the retailer cannot be held responsible for an article that is impure when he has endeavored to secure this article by specifying and paying for a product supposed to be pure. It is impossible for a small purchaser to employ exhaustive methods of analysis, and to a large degree he must be dependent upon the integrity of the jobber and manufacturer.

The specific gravity, boiling-point and optical rotation are useful

in assisting the analyst to determine adulteration; but the most accurate and convincing test is what is known as crystallization test, giving large, square-ended, laminated, opaque prisms, while the crystals of the synthetic acid are pointed and of different appearance generally. This method enables a careful analyst to differentiate quite satisfactorily between a pure and impure oil.

In making the crystallization test two stock solutions are required:

SOLUTION NO. 1.

NaOH	320 grammes.
Water, q. s.	4,000 c.c.

SOLUTION NO. 2.

HCl	1,280 c.c.
Water, q. s.	4,000 c.c.

Place 6 c.c. of the oil in a 500 c.c. round-bottomed flask, and add 25 c.c. of solution No. 1 and 25 c.c. of water. Boil until clear, *i. e.*, saponified. Pour in about 350 c.c. of hot water and bring to a boil. Now add 25 c.c. of solution No. 2 and boil for a few moments, then set aside to crystallize in a moderately warm place so that crystallization will be slow. A pure oil will give the characteristic large, square-ended, opaque crystals. The specific gravity is also of assistance in determining adulteration, a pure oil running from 1.84 to 1.83 at 15° C., boiling-point from near 218° to 221° C.

This test, however, will not detect the adulteration of a pure oil with a synthetic methyl salicylate of less than about 5 per cent., and to be employed successfully it is necessary, of course, that the operator be perfectly familiar with the crystallization of the synthetic oil and comparative characteristics of the crystals.

This test does not distinguish between the oil of wintergreen and oil of sweet birch, and while these two oils may possess different physical and physiological characteristics, the acid made from them is identical. But it is essential that we have the means of noting the presence of synthetic methyl salicylate which acts physiologically, as we have seen, in an entirely different manner.

Referring to the physical characteristics of these oils, an expert can readily distinguish by the odor the different oils. It is particularly marked between the synthetic oil and the oils of vegetable origin. It is interesting to note that distillers of oil of sweet birch often add the leaves of the wintergreen plant in distilling, evidently with the purpose of imparting a certain characteristic odor to the

oil which is distilled, and to those who employ these oils for their flavoring properties, it is essential that they are not substituted one for the other, both from an economic as well as a practical standpoint.

In conclusion, we would say, that with our present knowledge of these oils, it would seem advisable to continue in the Pharmacopœia Oleum Gaultheriæ, Oleum Betulæ Volatile and Methyl Salicylas.

A POWDER MIXER AND A PERCOLATOR SUPPORT.¹

BY H. F. RUHL.

The accompanying photographs illustrate a home-made powder mixer made by the writer, except the iron work, which was done by a neighboring blacksmith. It is constructed on the principle of a butter-churn, which, by means of a crank, is made to revolve on its axis, thus turning end over end and causing the contents to become thoroughly mixed.

The dimensions of the frame are as follows: The side uprights are of 2 x 4 lumber, and are 48 inches long; the cross pieces of the frame are of 1 x 3 lumber and 28 inches long. The box, or powder mixer proper, is 18 inches square and 30 inches high. The lid is made of two boards, with the grain of the wood crossing at right angles to prevent warping. The board on the under side of the lid is an inch smaller all around, as shown in the smaller photograph, and fits snugly into the top of the box; the lid is fastened in place by four door-shutter screws, such as were used years ago on the front doors of many pharmacies.

The iron work for each axle consists of two pieces of iron $\frac{3}{16}$ x 12 inches, crossed at right angles, to the centre of which (at right angles) is fastened the axle proper, 1 inch thick and about 10 inches long. (See smaller photograph.) On the inner side of the frame, where the uprights cross, iron plates 4 inches square and 3 x 16 inches thick, with a hole 1 inch through the centre, are fastened, in which the axles revolve. On each of the axles inside of the iron plates, a flange is made, so as to keep the mixer from shifting from side to side. Each axle is fastened with eight bolts (two

¹ Read at the meeting of the Pennsylvania Pharmaceutical Association, June, 1903, and communicated by the author.

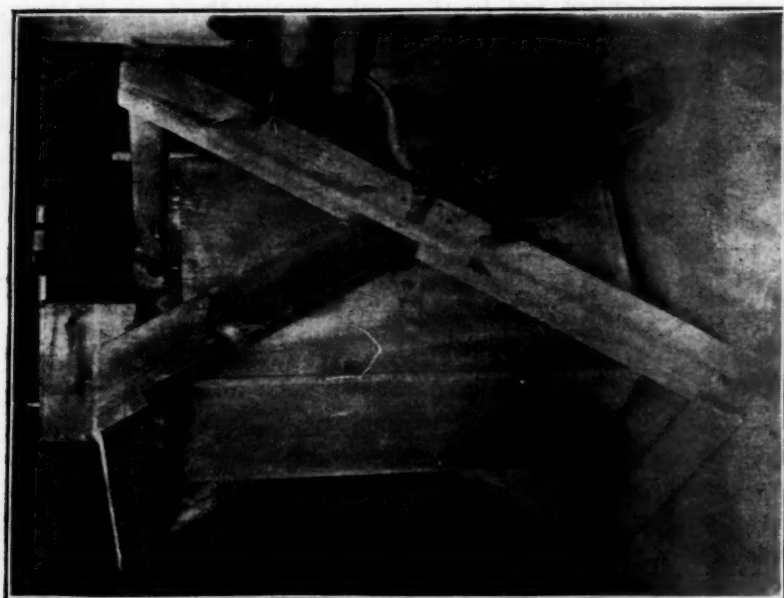


FIG. 1.—Powder Mixer (referred to as larger photograph.)

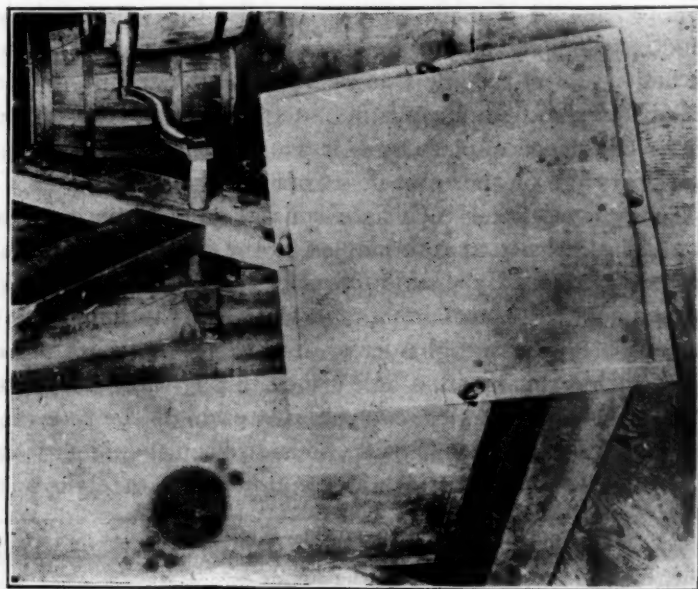


FIG. 2.—Powder Mixer (referred to as smaller photograph.)

on each arm). The end of each axle is shaped to receive a crank, though two are hardly ever needed except when very large quantities of powder are to be mixed. In using the mixer the powder is passed through a coarse sieve into the mixer (to break up any possible lumps), the lid screwed down, and by turning the crank the box is caused to revolve. The height of the box, and the fact of

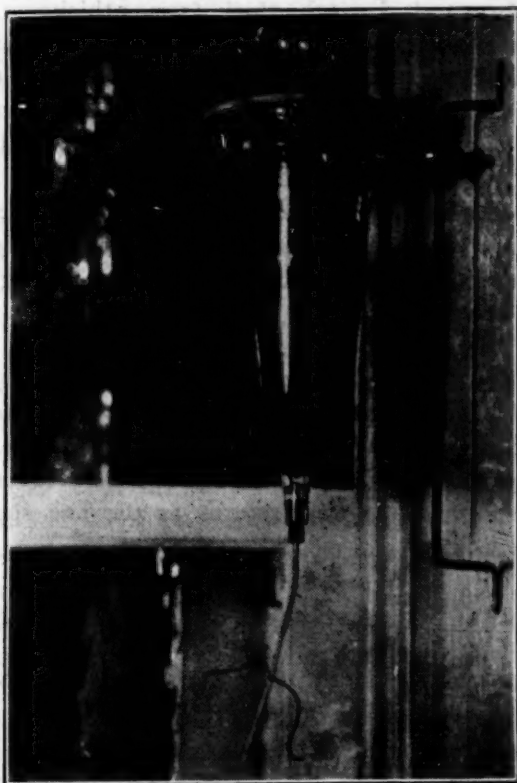


FIG. 3.—Percolator Support.

the box being square, causes the powder to shift from end as the mixer revolves and mixes the powder thoroughly if the mixer is not run too rapidly.

The cross-pieces of the frame, the lid and all the wood work, except the box, are fastened together with screws. The box is nailed securely.

As a mixer for horse and cattle powder, this home-made arrangement has been the source of a great deal of satisfaction to the writer. As much as 128 pounds of powder has been mixed at one time with perfect ease.

A Simple Percolator Support.—At one time a support for a percolator had to be devised for showing a pharmaceutical operation in the show window. The regular retort stand not being high enough, an iron rod $\frac{5}{16}$ inch thick (same thickness as retort stand rod), and about 22 inches long, shaped by a blacksmith into a flat U, 2 inches high and about 16 inches wide, with two holes at each end for fastening with screws against the wall, was the happy solution. After the window display was over, this rod, fastened against the wall, back of the working counter, has done excellent service when the retort stand would not support the weight of a heavy percolator, or if the retort stand was not high enough. The excellent feature of this simple support is its rigidity. No matter how large a percolator is fastened to it (with the regular retort rings) it is always firm.

A support like this could be made longer, and thus offer a wider range of usefulness, but the writer would much prefer to have two or three of them, and have them fastened at different heights to the wall, for greater rigidity is thus secured. No investment of a dime has ever brought as great returns as the one spent for this percolator support.

PROGRESS IN PHARMACY.

A QUARTERLY REVIEW OF SOME OF THE MORE INTERESTING ADVANCES
IN PHARMACY AND MATERIA MEDICA.

BY M. I. WILBERT,

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Foreign pharmaceutical journals have been giving considerable attention to historical matters relating to pharmacy, among others the *Pharmaceutische Post* has published, serially, a contribution to the "History of Pharmacy in Germany and Austria," while the *Zeitschrift des Allgemeinen Oesterreichischen Apotheker-Vereines* has been publishing installments of a lengthy "History of Glycerin as a Medicinal Agent," by Dr. J. Hockauf.

In England the *Dalton Centenary* was the occasion for more or less

lengthy historical articles in the *British Pharmaceutical Journal*. The celebration itself, which occurred on May 19th and 20th, was under the auspices of the Literary and Philosophical Society of Manchester, and was attended by representatives from chemical societies of many countries. In connection with this celebration Prof. F. W. Clarke, of the Smithsonian Institute, Washington, D. C., delivered the Wilde Lecture on "The Atomic Theory." (*Phar. Jour.*, 1903, page 759.)

The Liebig Centenary.—The one hundredth anniversary of the birth of Justus von Liebig, on May 12, 1903, was the occasion for a rather widespread rejuvenation of interest in the work of this great chemist. The German chemical as well as pharmaceutical journals devoted considerable space to reviews of Liebig's life and work. Many of the biographical notices were contributed by men who had come more or less intimately in contact with Liebig and were therefore able to contribute a number of additional personal reminiscences that, it is to be hoped, will be gathered together in some form of memorial volume.

Hoffmann Medal, instituted by the German Chemical Association in memory of the German chemist A. W. von Hoffmann, to distinguished foreign chemists, was awarded for the first time on May 5th, of this year, to Prof. Henri Moissan, Paris, for his investigations into the chemical and physical properties of fluorine, and to Prof. W. Ramsay, London, Eng., for his investigations into the composition of atmospheric air.

The Hanbury Medal was awarded this year to M. Eugene Collin, of Paris, France, for the prosecution of research in the natural history of drugs. (*Phar. Jour.*, May 9, 1903, page 659.)

Rice Memorial.—American pharmacists and the committee on revision of the United States Pharmacopœia, have honored themselves by marking, with a suitable monument, the grave of the late Charles Rice, in Woodlawn Cemetery, New York.

The unveiling of this memorial took place on the afternoon of July 7, 1903, in the presence of representatives of the Pharmacopœia revision committee and a number of friends.

The monument consists of a massive granite block, on a suitable base, and is fully in keeping with the life and wishes of the man whose last resting-place it is to mark. On a panel composing the front of the stone is the following legend:

" Charles Rice, Ph.D.,
Born October 4, 1841
Died May 13, 1901

Erected by his friends in grateful appreciation of his eminent services to Medicine and Pharmacy."

The Fifth International Congress for Applied Chemistry met in Berlin, Germany, from the 2d to the 8th of June. According to the extensive reports in the German journals the congress was a truly representative one, and all of the meetings of the twelve sections into which the practical work was divided, were well attended.

Section 8 was devoted to Hygiene, Medical and Pharmaceutical Chemistry. Among the numerous papers that were presented to this section, one, by Dr. Mjon, on "The Control of Active Medicaments," elicited considerable discussion. Dr. Mjon asserted that the present system of official inspection, in European States, was far from satisfactory and that the public was not receiving the protection it was entitled to, particularly in connection with patented chemicals and so-called proprietary articles, which are not included in the present system of inspection. (*Phar. Zeit.*, 1903, page 462.) Another paper, of considerable historic interest, was contributed by Dr. Kunz Krause, Dresden, "On the Relations of Applied Chemistry to German Pharmacy." In this paper the writer calls to mind that scientific as well as applied chemistry has been greatly advanced by contemporary pharmacists, and quotes the names of a large number of well-known chemists who at some time in their life were connected with pharmacy.

Absorbent Cotton.—Dr. F. Keppler (*Süd-Deutsche Apoth. Zeitg.*, 1903, page 439) reports the examination of seven samples of absorbent cotton, of which only two were considered to be very satisfactory, the remaining five gave a distinct acid reaction with litmus paper and also a distinct turbidity with barium nitrate test solution, indicating the presence of sulphuric acid. The fat present varied from 0.27 per cent. for the best, to 0.53 per cent. for the poorer quality.

Alkaloidal standards in the new Italian Pharmacopœia. According to a paper by G. Frerichs (*Apoth. Zeitg.*, 1903, page 420) the following drugs and preparations are to be standardized, gravimetrically: Cinchona bark, to contain 5 per cent. of total alkaloids;

extract of aconite, to contain not less than 0.5 per cent. of alkaloid; extract of belladonna, to contain not less than 0.5 per cent. of alkaloid; extract of hyoscyamus, the same as belladonna; extract of nuxvomica, 10 per cent. of total alkaloids; extract of opium, 15 per cent. of morphine; opium, not less than 10 per cent. of morphine; cantharides, 0.4 per cent. of cantharidin.

Anesthol.—This is the name given by Prof. W. Meyer to a mixture of chloroform, 43.25; ether, 56.75; and ethyl chloride, 20.50, to be used as a general anesthetic. (*Phar. Zeitg.*, 1903, page 544, from *Centralb. f. Gynecol.*)

Anthrasol, a limpid, light-yellow oil, resembling olive oil in appearance, is obtained from coal tar, and is described by the manufacturers as being a purified, colorless tar of great activity. It is said to be readily soluble in absolute alcohol, acetone, fatty oils, paraffine and paraffine oil. It has been used with some success in various skin diseases in which tar and preparations of tar have been found useful. (*Zeitschr. d. Allgem. Oest. Apoth. Ver.*, 1903, page 661.)

Cod-Liver Oil Substitutes.—A correspondent of the *Pharmaceutische Zeitung* (1903, page 428) suggests oil of sesamum as a desirable substitute for cod-liver oil. If thought desirable the addition of a minute quantity of iodine would serve to make the resemblance still more eligible.

Empyroform.—A formaldehyde tar preparation, to be used in various skin affections, is described as a dry, non-hygroscopic, brown powder. It is insoluble in water but soluble in chloroform, acetone and the solutions of the caustic alkalies. The preparation is said to be quite as efficient as tar and to be devoid of the disagreeable and penetrating odor so characteristic of the latter. (*Phar. Zeitg.*, 1903, page 544.)

Filmaron is the name given by Kraft (*Phar. Zeitg.*, 1903, page 275) to an amorphous acid that he considers to be the active constituent of Male Fern rhizome. Filmaron is described as being a bright yellowish-brown powder, insoluble in cold alcohol or petroleum spirit, freely soluble in chloroform, ether or carbon disulphide. The rhizome of male fern contains about 5 per cent. of filmaron. The dose is said to be from 0.50 to 0.70 at one time.

Gasu Basu, the name of an Indian plant discovered by Dalma. This plant contains an alkaloid that is said to be a satisfactory local anesthetic. Under the trade name Nervocidin it has been used to

some extent in solutions of from 0.01 to 0.1 per cent. (*Phar. Centralk.*, 1903, page 303, from *les Nov. Rem.*)

Hyoscyamus Muticus.—As a direct result of the published investigations into the composition of this plant the *Pharmaceutical Journal* (1903, page 585) records the importation and sale of several bales of *Hyoscyamus muticus*, presumably to manufacturers of hyoscyamine, which alkaloid has been demonstrated to be present in unusually large quantities.

Ichthyol Applications in Smallpox.—A Siberian physician, Dr. Kolbassensko (quoted by *Süd-Deut. Apoth. Zeitg.*, 1903, page 439) recommends the application of ichthyol or thyol, to prevent the progress of this disease. He ascribes the reported favorable results entirely to the black color, on the theory that the development and progress of smallpox is largely dependent on the chemically active rays of the spectrum.

Iodeugenol.—A preparation somewhat similar to aristol, made by allowing iodine to react with eugenol in an alkaline solution. It is described as being a yellowish powder having a slight odor of eugenol. Iodeugenol is insoluble in water but freely soluble in ether, fatty oils and solution of sodium hydrate. It is said to be a more efficient disinfectant than aristol. (*Phar. Zeitg.*, 1903, page 487.)

Manganese Saccharate and Syrup of Manganese.—The following formula for this appears in one of the recent pharmaceutical journals (*Süd-Deut. Apoth. Zeitg.*, 1903, page 298):

Dissolve 87 grammes potassium permanganate in from 4 to 5 liters of hot water, allow to cool to about 30° C. and pour into a mixture of 250 grammes of syrup with 1 liter of water. After complete reduction of the permanganate, the resulting magma is washed with from 6 to 8 liters of a 1 per cent. solution of sugar, and finally strained and pressed to free it from an excess of water, then add about an equal weight of sugar; finally add a solution of 7.5 grammes of sodium hydrate in 30 grammes of distilled water and allow to stand for about twelve hours at about 20° C.; finally dilute the whole, with distilled water, to weigh 1,500 grammes. The syrup contains about 2 per cent. of manganese.

Methyl Acetyl Salicylate—Methyl Aspirin, has been recommended as an anti-rheumatic. Methyl aspirin occurs as colorless, insoluble crystals in water, but soluble in alcohol, glycerin, chloroform, and the fatty oils. It is not decomposed by dilute acids, but is readily

decomposed by alkalies. Given in daily doses of from 5 to 8 grammes. (*Süd-Deut. Apoth. Zeit.*, 1903, page 295, from *Repertoire de Phar.*)

Melting Point of Paraffin.—This is given in the German Pharmacopœia as being from 74° to 80° C. Thede (*Phar. Zeitg.*, 1903, page 373) says that in twenty years' experience with different kinds of paraffin he has never met with a sample that had a higher melting point than 65° to 66° C. By far the greater number of paraffine samples have a melting point of from 54° to 60° C. Thede further suggests that the Pharmacopœial Commission no doubt intended that ceresin be used in place of paraffin.

Narcotile.—An abstract in *American Medicine* (June 6, 1903, page 930) describes the method of administering narcotile. From the description given it would appear to be a compound somewhat similar, in its effects at least, to chloride or bromide of ethyl. It is used for general anesthesia of short duration or as an introduction to ether-narcosis.

The Gelatinization of Tincture of Kino.—Edmund White (*Phar. Jour.*, 1903, page 644) gives a preliminary report on some experiments that he has been making with tincture of kino, with a view of determining the cause of its frequent gelatinization.

From his experiments White has come to the conclusion that the gelatinization is due to an enzyme, probably an oxydase, and suggests that a simple heating of the preparation to the boiling point would effectually prevent gelatinization. This he further demonstrates by reporting some comparative experiments. The sample of tincture which had been heated remained limpid after the main or unheated portions had become gelatinized.

Note on Kino Enzyme.—Following the report of the experiments made by Edmund White, David Hooper, F.C.S. (*Phar. Jour.*, 1903, page 840), publishes some experiments which he made with several varieties of kino with a view of determining the nature of the enzyme, and also the degree of heat necessary to destroy the same. Hooper finds that the enzyme is an oxydase, and will readily withstand a dry heat of 90° C. for several hours. Its activity is readily destroyed, however, when boiled in water at 100° C.

If, in practice, these reports are found to be based on fact, they would indicate a very simple procedure to prevent gelatinization in this highly useful astringent tincture. Simple boiling in water of

the kino, with the subsequent addition of the necessary amount of alcohol.

Leaves of the Coniferous Plants are the subject of a communication by A. Tschirch, from the Pharmaceutical Institute of the University of Berne (*Schweiz. Wochenschr. f. Chem. u. Phar.*, 1903, page 254), in which he gives descriptions accompanied by illustrations of transverse sections of thirty-three typical varieties of leaves of coniferous plants. Tschirch suggests, as a practical application of a study of these leaves, that in many cases it would be possible to obtain additional evidence as to the origin of a resin or other product, by a careful examination of the accompanying leaf remnants.

Velopurin is an ointment base that is said to be produced by dissolving from 80 to 150 grammes of an olein soap in 100 of alcohol, after filtering from 50 to 100 grammes of olive oil are added, and the whole emulsified in a mortar. The resulting mixture is particularly recommended as a base for ointments of mercury on account of the ready absorption of the latter. (*Zeitschr. d. Allg. Oest. Apoth. Ver.*, 1903, page 689.)

Medicated Waffles.—This appears to be the latest fad in Germany. The waffles are said to be prepared so that each one contains the required average dose of the desired medicament.

AMERICAN PHARMACEUTICAL ASSOCIATION.

The fifty-first annual meeting of the American Pharmaceutical Association was held at Mackinac Island, Mich., August 3d to 10th, the Grand Hotel being the headquarters of the Association.

Immediately upon convening the first session on Monday after noon, President Geo. F. Payne, of Atlanta, Ga., introduced Dr. J. R. Bailey, a resident of Mackinac Island and one of the oldest druggists of Michigan, who welcomed the members of the Association in a short but pleasing address. Prof. Jos. P. Remington, of Philadelphia, being invited to respond for the older members of the Association, spoke of the representative character of the Association and the custom of holding the meetings in various sections of the country, and among other things said that as early as 1634 Mackinac Island was discovered by the French explorer Jean Nicolet. Mr. O. W. Bethea, of Meridian, Miss., was also called upon to speak and graciously responded as the representative of the younger members.

The President then called upon several of the official delegates present. Frederick T. Gordon, a pharmacist of the Navy, said that this was the first time the U. S. Navy had recognized pharmacy by sending a delegate to the Association. The Public Health and Marine Hospital Service was represented by Albert W. Roehrig and Henry Gahn, the former of whom said that pharmacy had made wonderful progress, although the Government had been slow to recognize it. This, he said, was largely due to precedent, a factor of much import with the Government. Lyman F. Kebler, of the Bureau of Chemistry, U. S. Department of Agriculture, said that by a recent Act of Congress a number of adulterated drugs can be kept out of our markets, but that this Act does not apply to many chemicals and other products, and the question often arises as to whether a product is a drug or some other commodity. He said that much legislation is needed along this line, and that the aim should be to establish patent processes rather than to sanction patent products. Thomas P. Cook, of New York, cordially greeted the Association on behalf of the National Association of Wholesale Druggists, and Lewis C. Hopp, of Cleveland, O., spoke of the work and purpose of the National Association of Retail Druggists.

The fact that over fifty organizations, including three departments of the U. S. Government, sent delegates to the meeting is significant as showing the interest taken in the deliberations of the Association and as indicating the extent of the power and influence of the A. Ph. A. in various ways.

First Vice-President Wm. L. Cliffe, of Philadelphia, was asked to take the chair while the presidential address was being read by George F. Payne.

The address was rather lengthy, being devoted to the consideration of a number of subjects, and contained twelve recommendations. It was referred to a committee consisting of Frank G. Ryan, John F. Patton and John W. Baird. At a later meeting this committee reported and the Association adopted the following resolutions:

(a) That the names of all committees to be appointed by the President for each year be arranged in a complete separate list by the General Secretary before the close of each annual meeting and a copy of the same be given the incoming President, preferably at the close of the last general session or as soon thereafter as practical. The General Secretary is very familiar with all the standing committees and can have them written out in advance with space between to insert any new committees which may be formed. This will prov-

a saving of time taken up in correspondence between the General Secretary and the new President, and will enable the President to arrange his committees with much more promptness and satisfaction to himself. A president only has a few months to serve, and such a full list would save much time which is now necessarily lost in looking up these matters.

(b) That the committees appointed by the President be printed together in the proceedings and not mixed up with those of the council, that the committees to be appointed by the President may be seen by him at a glance and more easily studied and provided for.

(c) That the various professors of colleges of pharmacy and members of State Boards of Pharmacy present be requested to unite in a joint conference at some convenient time during our meeting for an interchange of ideas and views in regard to what should be: (1) The generally adapted requirements of those who come before State Boards of Pharmacy for examination to secure license to practise pharmacy. (2) What should be the proper character of Board examinations. (3) What should really constitute a standard college of pharmacy.

(d) That an index to his report be prepared each year by the reporter on the progress of pharmacy and attached to the work. (This was referred to the Committee on Publication.)

(e) That the exhibit feature which was omitted at this meeting on account of the distance from any large city, be again resumed at the next meeting, as it is far too valuable in its instructive features to be discontinued.

(f) That the work for a lower tax on alcohol be actively continued.

(g) That the name of the Auxiliary Committee on Membership be changed to that of General Committee on Membership. It being a very important independent committee, the latter seems more appropriate.

(h) That a committee be appointed to investigate the feasibility of publishing formulæ for domestic remedies. (This was referred to the Committee on National Formulary.)

Albert E. Ebert, of the Committee on Scope of Work of the Drug Laboratory of the U. S. Department of Agriculture, moved that the committee be continued, which motion prevailed.

C. S. N. Hallberg, chairman of the Committee on Credentials, read the names of the various organizations which had sent delegates.

The following named members were appointed on the Committee on Time and Place of Next Meeting: E. G. Eberle, chairman; O. F. Claus, Wm. L. Cliffe, J. W. T. Knox, C. S. N. Hallberg.

After the reading of the minutes of the previous session by Secretary Caspari, the first matter taken up at the SECOND GENERAL SESSION on Tuesday morning was the report of the Committee on Membership of the Council, which report was presented by Henry M. Whelpley, who had been chosen to succeed the late Geo. W. Kennedy as Secretary. The report showed that the Association now has 1,282 contributing members, 117 life members and ten

honorary members. Sketches of the members who had died during the year were given, the one on the late Secretary Geo. W. Kennedy, eulogizing his life and work, being read in full.

On motion of C. S. N. Hallberg the report was adopted by a rising vote in honor of Mr. Kennedy.

The Nominating Committee, Chas. E. Dohme, chairman, unanimously reported in favor of the following candidates, who were accordingly chosen as the officers for the ensuing year:

President, Lewis C. Hopp, Cleveland, O.; First Vice-President, Wm. C. Alpers, New York; Second Vice-President, A. M. Roehrig, U. S. Public Health and Marine Hospital Service, New York; Third Vice-President, Otto F. Claus, St. Louis; Treasurer, S. A. D. Sheppard, Boston; Secretary, Chas. Caspari, Jr., Baltimore; Reporter on Progress of Pharmacy, C. Lewis Diehl, Louisville; Members of the Council for three years: Leo Eliel, South Bend, Ind.; Geo. F. Payne, Atlanta, Ga.; E. G. Eberle, Dallas, Tex.

NATIONAL BUREAU OF MEDICINES AND FOODS.—Dr. H. H. Rusby, chairman of the Committee for the Establishment of a National Bureau of Pure Foods and Drugs, first read the resolutions adopted by the committee, which were as follows:

WHEREAS, The foods and medicines supplied in the United States do not so uniformly agree with proper standards of purity, quality and strength as they should; and

WHEREAS, A degree of mistrust and want of confidence concerning quality of such foods and medicines prevails to a discouraging extent; therefore it is

Resolved, That a more perfectly organized system for remedying the above mentioned conditions than that now existing should be devised and put into operation; and

Resolved, That the A. Ph. A. and the American Medical Association, acting in harmony with the United States Government authorities, constitute the most competent and trustworthy means for obtaining the object named; and

Resolved, That the American Pharmaceutical Association shall co-operate to this end with the above-mentioned institutions, provided that a plan be devised satisfactory to those institutions, and that the committee of this Association be continued and instructed to report to the council in the event that a plan satisfactory to the council of this Association be reported to them previous to the next meeting of this Association. Said council shall be authorized to select from the members of the A. Ph. A. a Board of Directors consisting of five members to act with a similar board in the event of its appointment by the American Medical Association and with the United States Government authorities in the establishment of a National Bureau of Medicine and Foods, and the council shall immediately upon the election of such board report the same to the President of the American Medical Association.

Resolved, That in carrying out these resolutions the following general principles shall be adhered to :

(1) That neither this committee nor the proposed Board of Directors shall have any authority to draw upon any funds of the A.Ph.A.

(2) That the methods employed for attaining the foregoing objects may include combination of worthy ones as both, provided that said methods of condemnation do not in any way involve the A. Ph. A. in legal responsibility.

(3) That nothing to be undertaken by such bureau shall be in conflict with the spirit of the U.S.P. or with the U. S. Government authorities.

(4) That the operations of the proposed bureau shall be free from any attempt to secure financial profit for any of the institutions named herein nor for any of their members or agents, but said bureau is authorized to employ proper means of securing the funds necessary to defray its legitimate expenses.

Dr. Rusby in the course of his remarks said that he considered this the most important work ever brought before the Association. The committee had been informed on the question even before their appointment three months ago, but had gained much information since. He said that the American Medical Association had appointed a committee of five to consider the question and report at the last meeting, but all that that association could do was to continue their committee until it was decided what the A.Ph.A. was going to do. He therefore considered it important for the A.Ph.A. to appoint a board of directors to consider the subject, and he recommended the appointment of this board by the council temporarily.

The committee has issued a general statement giving the plans contemplated by the proposed bureau. The plan has grown out of the evils connected with the lack of standard in pharmaceutical preparations, adulterations of drugs, chemicals and food-stuffs, and the exceedingly complex condition of the many remedial preparations constantly offered to the medical profession. It is proposed to establish standards ("levelize" the products up or down to one standard, viz, the U. S. Pharmacopœia) for medicinal and food products to which manufacturers shall adhere. The standards shall be made by a bureau of control consisting of ten directors, five to be elected by the American Medical Association and five by the A.Ph.A.

"Manufacturers who desire to place the production of their goods under the supervision of the Bureau may become associate members upon a vote of eight of the ten directors; and each product is then to be submitted to the Bureau for the establishment of the standard. Permission will thereupon be given to print upon each package of the product a statement expressing the Bureau's approval. More-

over, advertising matter will likewise be examined by the Bureau's censor, and will, if it conforms to the established requirements, be given the official 'O. K.' mark.

"In order to have the proper legal and business standing, the work should be done by a corporation. As it is not intended that profit shall be made from the undertaking, the corporation should be a membership and not a joint stock corporation. It is proposed to incorporate under the laws of the State of New York, a membership corporation to be known as the National Bureau of Medicines and Foods.

"The membership of this bureau should be of two or more classes. All members of the American Medical Association and the American Pharmaceutical Association should be scientific members of the bureau. The organization should be so effected as to fully protect the American Medical Association and the American Pharmaceutical Association, their agents and all their members who become members of the proposed bureau, from all possibility of being involved in legal or other complications that might assail the proposed bureau. Those manufacturers whose goods it might be requested to vouch for should be admitted to associate membership, but should have no voice in the control of the bureau."

The legal aspects of the question had been investigated by Dr. Philip Mills Jones, of San Francisco, who said that the corporation as proposed had been pronounced by one of the leading law firms in New York City to be one of the strongest that could be organized.

After some discussion Professor Diehl moved the adoption of the preamble and first resolution and referring the remaining resolutions to council. This motion was unanimously adopted.

The report of the financial accounts in the care of the General Secretary was read by Professor Caspari and adopted.

The Committee on General Prizes, Dr. Rusby, chairman, recommended that the John M. Maisch prize be awarded to Pierre Felix Perrédès for his paper on "The Anatomy of the Stem of *Derris Uliginosa* Benth." (an Eastern Fish Poison); the Hager prize to L. W. Famulener and A. B. Lyons for their paper on "The Relative Strengths of Various Preparations of Digitalis and Kindred Drugs as Shown by Experiments with Frogs"; first general prize to H. M. Gordin for his paper on "The Quantitative Estimation of Strychnine in Mixtures of Strychnine and Brucine"; second general prize to

Ed. Schaer for his paper entitled "On Guaiac-Blue and Aloin-Red, and Their Use for Chemical Reactions"; and the third general prize to J. O. Schlotterbeck for his paper on "The Color Compound of *Stylophorum diphylllum* and *Chelidonium majus*."

The Auxiliary Committee on Membership, Wm. Mittelbach, chairman, suggested that this committee be appointed at the annual meeting or soon thereafter, and that each member of the Association securing a new member be allowed \$1 to cover the expenses incurred.

The Committee on Procter Memorial, Joseph P. Remington, chairman, recommended that a canvass be made among members to secure life members so as to increase the Procter Fund (*i. e.*, the life-membership fund) to \$25,000.

CARNEGIE INSTITUTION.—C. A. Mayo, chairman of the committee, reported that the following address had been submitted to the Board of Trustees of the Carnegie Institution and a reply was received to the effect that the Board did not consider it desirable at this time to establish an Advisory Committee on Pharmaceutical Research :

To the Trustees of the Carnegie Institution :

GENTLEMEN. —At the semi-centennial meeting of the American Pharmaceutical Association the following preamble and resolutions were adopted:

WHEREAS, Pharmacy in its higher branches is confronted with many grave problems which can only be solved by original research conducted along broad lines, and involving labors so great as to be wholly outside the possibility of individual performance under ordinary conditions ; and

WHEREAS, The solution of these scientific problems is fraught with immense possibilities of good to the human race in the discovery of new drugs and the simplification of our materia medica and its more complete comprehension ; and

WHEREAS, According to the articles of incorporation, the objects of the Carnegie Institution are—

"(a) To conduct, endow and assist investigation in any department of science, literature or art, and to this end to co-operate with governments, universities, colleges, technical schools, learned societies and individuals.

"(b) To appoint committees of experts to direct special lines of research.

"(c) To publish and distribute documents ;" therefore be it

Resolved, That the American Pharmaceutical Association hereby petition the Board of Trustees of the Carnegie Institution to establish an Advisory Committee on Pharmaceutical Research, with a view to promoting original research in pharmaceutical science, etc. ; therefore be it

Resolved, That the President of the American Pharmaceutical Association be instructed to appoint a committee of twenty-five members, which committee shall be charged with the duty of laying the above resolutions before the Carnegie Institution, together with suggestions as to how the work of this Advisory Committee be conducted and made most effective.

In pursuance of these resolutions a committee has been appointed represent-

ing leading institutions of learning connected with pharmacy, to lay the matter before your board, and to proffer their services to the board in furnishing any information that may be desired regarding research in this particular field.

In the original deed of trust the donor says that it is proposed to found an institution which "shall in the broadest and most liberal manner encourage investigation, research and discovery—show the application of knowledge to the improvement of mankind, etc." This phraseology warrants the inference that some portion of the funds of the institution are to be devoted to applied science, and if this should be done this committee respectfully urges that the Board of Trustees name an Advisory Committee on Pharmaceutical Research and appropriate such funds as may be required to carry out certain lines of co-operative research with the advice and under the direction of such Advisory Committee, and also appropriate funds for individual research work in this field.

It is respectfully suggested to the Board of Trustees that it is not only important to determine as to what work should be done in the domain of science, but also to determine what work is not being done and not likely to be done through other agencies already interested.

There are many broad problems awaiting solution in pharmacy which can only be solved either by a widespread and comprehensive co-operation on the part of individual workers or by long continued and careful research on the part of specialists. The results to be achieved by such researches, while of the first importance in applied science, offer no prospect of any financial returns whatever, and unless their study is undertaken through some central agency of broad scope and ample means, such as the Carnegie Institution, these problems will remain untouched.

At the International Conference for the Unification of Potent Remedies, held at Brussels on September 15-30, 1902, a motion made by the Swiss delegates that the conference determine the methods of alkaloidal assay was defeated on the ground that in the whole field of alkaloidal assay there was no one alkaloid of which it could be definitely stated that any certain method was the best to be used in making the assay. Much good has been done by individuals in this direction, but until this work is taken in hand in a broad and generous manner there can be no reasonable hope that any definite results can be obtained. In his annual address the chairman of the New York Section of the Society of Chemical Industry has pointed out the serious character of the errors arising from differences in methods in alkaloidal assay and the importance of standardization in this field.

In the correspondence which has appeared in the columns of *Science* during the past few months touching on the most profitable field for the research work of the institution, several contributors have emphasized the need for some central body to aid and undertake the direction of co-operative investigations such as would be required to settle the above questions. This is but one of the many and important problems awaiting solution in pharmacy, and which can only be solved through co-operative research work on a large scale.

Researches of this character can be carried out in pharmacy at a comparatively slight expense, since competent workers can be found who will make experiments along certain lines at little or no expense to the general fund, provided that the direction of the work and the codification and publication of the results obtained can be carried out at the expense of the institution.

There is also great need in pharmacy for fellowships for advanced students. In the whole of the United States there are only two pharmaceutical fellowships in existence which are maintained from year to year at private expense. There are teachers in pharmacy who have marked ability in the field of research, but whose pedagogical duties and modest salaries make it impossible for them to prosecute lines of research already begun. Should the Carnegie Institution see fit to appoint an Advisory Committee on Pharmaceutical Research, such committee would find no difficulty in finding men who, if given comparatively small stipends, would be enabled to carry on advanced research work with but slight expenditure of the funds of the institution, thus carrying out the instructions of the donor to find the "exceptional man in every department of study . . . and enable him to make the work for which he seems specially designed his life work."

Should the Board of Trustees desire any further information or suggestions this committee would be pleased to carry out their wishes and to do everything that lies in its power to further the ends for which it has been appointed by the American Pharmaceutical Association.

The Committee on Weights and Measures, Frank G. Ryan, chairman, reported that the bill providing for the adoption of the metric system was withdrawn at the last session of Congress, but that it would be presented to both houses at the next session. He also stated that the most active opposition to this measure had come from mechanical engineers, and that while no positive progress had been made the discussions had been valuable.

Various other committees presented reports as follows: The Committee on National Legislation, F. C. Henry, chairman; Delegates to the National Association of Retail Druggists, Wm. McIntyre, chairman; Delegates to the National Association of Wholesale Druggists, C. A. Mayo, chairman; and Delegates to the American Medical Association, C. S. N. Hallberg, chairman.

The subject of the standardization of antidiphtheritic serum was brought up by L. E. Sayre, who offered a resolution requesting the U. S. Public Health and Marine Hospital Service to establish and maintain a standard antidiphtheritic serum for the use of investigators, manufacturers and individuals who may have need for such. This was adopted.

The place of meeting for next year selected by the Association is Kansas City and at the last general session it was decided to hold the meeting the first week in September. A total of 199 applicants for membership in the Association were reported at the last general session. The report of the treasurer, S. A. D. Sheppard, was read. On motion of Edward Kremers and A. E. Ebert, the treasurer was

instructed to present a more detailed report of the finances of the Association for the information of the members at the next annual meeting. The report of "the committee on advancing the status of pharmacists in the public service," was read by the chairman, George F. Payne. A resolution was offered by C. S. N. Hallberg, asking the council to arrange the work of the Association so as to take the least number of days, and was unanimously adopted.

A paper on "Procter Memorial," by John F. Hancock, was presented by the secretary, Chas. Caspari, Jr. C. Lewis Diehl moved that the paper be printed in the Proceedings, and that it be referred to council to present a report at the next annual meeting.

With the installation of the new officers, the work of the annual meeting was brought to a close.

SCIENTIFIC SECTION.

The Scientific Section was convened on Wednesday morning with J. O. Schlotterbeck in the chair. Owing to the absence of the Secretary and the associate member of the committee, Edward Kremers and W. A. Puckner were selected to the respective offices. The chairman's address was devoted to the consideration of the investigations upon the mydriatic alkaloids, atropine and hyoscyamine, and will be published in a later issue of this JOURNAL.

The Committee on Ebert Prize, Julius A. Koch, chairman, recommended the award of the prize to Frederick G. Power, London, for his paper on "The Chemistry of the Stem of *Derris Uliginosa* Benth. (An Eastern Fish Poison)."

The Committee on Drug Market reported through E. H. Gane variations in the drugs and chemicals examined by them. The report will be printed in full in a later issue.

The committee also moved the adoption of the following resolutions which were favorably acted upon by the section, but apparently not considered by the Association:

Resolved, That it is the sense of the American Pharmaceutical Association that great good would be accomplished if the Secretary of the Treasury would confer with the Secretary of Agriculture for the purpose of making suitable arrangements with all the United States port chemists to place at the disposal of the Bureau of Chemistry all their analytical methods bearing on drugs and chemicals and the data they obtain in the examination of imported goods from time to time.

Resolved, That the interests of medicine and pharmacy would be advanced by the appointment, under the direction of the Association of Official Agricultural Chemists, of a referee on medicinal plants and chemicals.

At the third session of the section the following officers were elected: William A. Puckner, chairman; E. H. Gane, secretary.

The following papers were presented and are here given in abstract:

PILOCARPUS LEAVES OF COMMERCE.

By Henry H. Rusby.

The author called attention to the large proportion of spurious drug upon the market and said that a large number of drugs in tropical America are called "Jaborandi" which are not products of *Pilocarpus*. He recommended the use of the term "*Pilocarpus*" in place of Jaborandi as this would tend toward excluding the spurious drug. He also described the principal commercial varieties, viz., *Pilocarpus Jaborandi* and *P. microphyllus*.

EAST TENNESSEE PINK ROOT.

By Rodney H. True.

In considering the question of the cultivation of medicinal plants by the U. S. Department of Agriculture, *Spigelia marilandica* was selected as one of the plants which it would be desirable to cultivate. The specimens received by the Department proved to be *Ruellia ciliosa* (Fam. Acanthaceæ) and it is supposed that the use of this material has led to the elimination of true "pink root" from the market.

TESTS FOR PHENACETIN AND ACETANILID.

By George M. Beringer.

The author reviewed the published statements in regard to the physical properties, reactions and tests for phenacetin and acetanilid. He has not found the indophenol reaction or Schwartz's test (the so-called isonitrile reaction) satisfactory, nor are some of the color reactions reliable. The author has devised the following test which he recommends as distinguishing phenacetin from acetanilid: 500 grammes of either acetanilid or phenacetin with 20 c.c. solution of sodium hydroxide (1 to 2 of water) are boiled in a flask, connected with a reflux condenser, for half an hour. After cooling this

is extracted with 25 c.c. of petroleum ether or ether; the ethereal solution is separated and filtered and the separating funnel and filter washed with sufficient ether or petroleum ether to yield 25 c.c. of solution. 1 c.c. of this solution is then tested with the following reagents: solution of chlorinated soda, filtered saturated solution of chlorinated lime, chromic acid solution (1 per cent.), solution of potassium bichromate (1 per cent.), solution of potassium permanganate (1 per cent.), solution of potassium ferricyanide (1 per cent.), solution of ferric chlorid (1 per cent.), cold saturated solution of ammonium vanadate and sulphuric acid, potassium chlorate and hydrochloric acid, solution of mercuric nitrate, and bromine test solution.

The author claimed that by these tests, especially with the use of solutions of chlorinated lime, he can detect as little as 3 per cent. of acetanilid in phenacetin, the phenacetin solution being yellowish while the solution containing acetanilid is colored purplish.

Mr. Beringer recommends for adoption in the pharmacopœia the following test: "1 gramme of phenacetin boiled for one minute with 3 c.c. solution of sodium hydroxide (1:2), the solution cooled and then agitated with 5 c.c. solution of chlorinated soda should remain a clear yellow liquid. The production of purple red or brown red cloudy liquid or precipitate indicates the presence of acetanilid." The author claims that "with the official description of melting point, Hirschsohn's bromide water test and each of the color tests with sodium hypochlorite, the pharmacist can test phenacetin for acetanilid."

AN EXAMINATION OF SAMPLES OF COMMERCIAL PHENACETIN.

By George M. Beringer.

The results of the author's examination of commercial samples showed that 148 were pure, 27 grossly adulterated and 7 slightly contaminated.

PHENACETIN.

By Lyman F. Kebler.

The history of the development of this chemical was traced from the researches of Cahours to the filing of a patent in this country. The patent was reviewed, and while it does seem to be an unjust grant of a monopoly, our present laws allow such a privilege, consequently the patent should be respected. Every possible effort

should be made to have the patent laws allowing monopolies of this character to be modified. The constitutions of phenacetin and acetanilid were compared with a view of showing how difficult it is to detect the latter in the former by chemical means. The physical and chemical tests were reviewed and their utility ascertained. There are numerous misleading statements in literature relative to the efficacy of some of the chemical tests. It is virtually impossible to secure an ounce of the illegitimate product from the druggist, but the source of supply is usually well known to most of them. Very little phenacetin appears to be smuggled into this country at present. It is said to be regularly imported, duty paid, as phenacetin and paracetphenetidin.

NUX VOMICA ASSAY.

By W. A. Puckner.

The results obtained by the author show that the aliquot part method in the assay of nux vomica gives correct results, apparently through a compensation of errors; that an hour's maceration and subsequent percolation may well be substituted, and that alcohol should here be added to the light chloroform-ether mixture usually used in the Keller method, since its addition facilitates the extraction of the alkaloids, and also prevents the formation of emulsions in subsequent steps of the determination.

MESQUITE.

By E. G. Eberle.

The author described the plant and mentioned the uses of the various parts. In regard to the gum, he said that one tree yields about five pounds. The dried sap with some of the gum is known as "black-gum."

CONTRIBUTION TO THE PHARMACOLOGY OF NARCOTINE (A CORRECTION).

By Albert E. Ebert.

In previous papers (this JOURNAL, 1867, p. 196, and 1902, p. 157) the author states that it is "a mistake to remove the *narcotine* from any of the preparations of opium." In a recent paper A. C. Crawford and A. R. L. Dohme (Proc. A. Ph. A., 1902, p. 478; also this

JOURNAL, 1902, p. 507) confirm these statements by experimental evidence. They further state, however, that they have found no evidence of the toxic effects as stated by Ebert, whereupon Mr. Ebert questions what this statement means, as his claim has been all along that narcotine is non-toxic.

ACETIC ACID AS A MENSTRUUM FOR MAKING FLUID EXTRACTS.

By J. Percy Remington.

In this paper the author summarized the results of experiments during the past few years in the manufacture of this class of preparations and their medical properties. Dr. Kremers asked if experiments had been made to determine if there was a hydrolyzing action of the acetic acid menstrooms on the principles of such drugs as hyoscyamus, etc.

A NEW METRIC MEDICINE GLASS.

By M. I. Wilbert.

The author has devised a conical glass, which is graduated, in such a way that a teaspoonful is equivalent to 5 c.c.; a dessertspoonful to 10 c.c. and a tablespoon to 15 c.c. In reply to the statement that physicians should write their prescriptions in the metric system, as contended by one of the speakers discussing this paper, Mr. Smith said that while physicians may write their prescriptions in the metric system, they will order the dose in teaspoons.

ON THE CRYSTALLINE SUBSTANCES OF PRICKLY ASH BARK.

By H. M. Gordin.

The author has isolated the crystalline substances from both northern and southern prickly ash barks. The method of isolating the crystalline principle (xanthoxylin, designated very happily by the author as xanthoxylin N) from northern prickly ash is as follows:

" Exhaust the powdered northern prickly ash with benzine, distill the latter off and take up the oily residue with a mixture of alcohol, water and potassium hydroxide (for 100 grams oil take 20 grams KOH, 20 c.c. water and 70 c.c. alcohol). Warm the mixture gently about 10 minutes, dilute with water to about ten times the amount of oil taken and pass CO_2 into the mixture till the latter commences to become thick and change color from green to

yellow. The xanthoxylin N falls out at first amorphous, but on standing over night it becomes crystalline. The crystals are collected on a strainer, washed with water and recrystallized a couple of times from alcohol."

The crystalline principle (xanthoxylin S) in southern prickly ash does not behave toward KOH and CO₂ like xanthoxylin N, and the following method has been devised for its isolation:

"The powdered southern prickly ash was exhausted with benzine, the latter distilled off completely, and the oily residue mixed with twice its volume of petroleum ether. On standing over night a considerable amount of a crystalline sediment separated out. The crystals were taken up with cold ether, the ethereal solution filtered, the ether distilled off, and the residue recrystallized repeatedly from hot alcohol."

The results thus far tend to show that xanthoxylin S is possibly an alcohol or a phenol of which xanthoxylin N is the methyl ether. The formula of xanthoxylin S could then be written C₁₄H₁₁(OH)O₃, and that of xanthoxylin N, C₁₄H₁₁(O.CH₃)O₃.

MEASUREMENT OF THE WIRES AND MESHES OF SIEVES.

By Raymond H. Pond.

The French Codex directs not only the fineness but the kind of material to be used for the sieves. The author examined the commercial sieves on the market and found that most of them are true in one direction, but in the other the number of wires varies considerably. He also found, as was to be expected, that the powders in the market varied considerably. One of the interesting things brought out in this discussion was the statement by Mr. Kebler that of a sample of so-called "No. 20" cinchona powder 53 per cent. would not pass through a No. 20 sieve. A powder of nux vomica had a similar large residue.

COD-LIVER OIL AND ITS ADULTERANTS.

By E. H. Gane.

The present scarcity of Norwegian cod-liver oil, coupled with the extraordinary advance in the market price, has resulted in especial attention being drawn to this article. The fact that the present year's crop of oil is totally inadequate to supply the normal demand has led to the offering of numerous substitutes and to considerable

adulteration. The author submitted the following sample tests for the benefit of retail pharmacists.

(1) Place half an ounce of the oil in a test tube and allow to stand in shaved ice for two hours. A pure non-freezing oil should remain perfectly clear.

(2) Boil one fluid drachm of the oil with half an ounce of a 5 per cent. solution of caustic potash in alcohol until the solution is clear. Dilute with two ounces of water and heat until the alcohol is expelled. Then add an excess of hydrochloric acid and note the odor of the fatty acids. A strong herring-like odor or a bad smelling liquid indicates adulteration with seal or other oils. A faint herring odor may be disregarded. Pure cod-liver oil usually yields a soap and fatty acids of a fishy smell, with no bad odor.

(3) Place twenty drops of the oil on a watch glass and add five drops of strong nitric acid. Stir well and note the color. Pure cod-liver oil gives a beautiful rose red color which changes in about half an hour to lemon yellow. A dirty brown or blackish mixture indicates adulteration with other oils.

A large number of analytical data and important bibliographical references accompanied the paper.

THE PHYSIOLOGICAL ASSAY OF CANNABIS INDICA.

By L. W. Famulener and A. B. Lyons.

The authors contend that cannabis indica preparations can be standardized by physiological assay but not by chemical methods. They also found that the official fluid extract, extract and tincture alone retained their medicinal activity, while all preparations of the drug in the form of powders soon became inactive.

DESCRIPTIONS OF CRUDE DRUGS.

By L. E. Sayre.

The author illustrated the inaccuracy in the description of drugs depending upon gross characteristics as size, color, etc., and hoped that the information obtained from a histological study of drugs would be utilized in the identification of crude drugs. H. H. Rusby said that there were greater differences between the cellular elements of the different drugs than their external characteristics.

AN IMPROVED METHOD FOR THE ASSAY OF ALKALOIDAL DRUGS.

By A. B. Lyons.

In the method proposed by the author he avoids the use of aliquot parts as in Keller's method. The elimination of aliquot parts from routine assay methods has been advocated by Puckner (*Pharm. Review*, xvi, p. 180 and xx, p. 457) and seems to be gaining ground in this country.

THE LOST ARTS. PLASTERS.

By C. S. N. Hallberg.

The author gives the following formulae:

Lead oleate—(*emplastrum plumbi*): soap, granular and dried, gm. 100; lead acetate, 60; distilled water, a sufficient quantity. Dissolve the soap in 350 c.c. hot distilled water and strain the solution. Dissolve the lead acetate in 250 c.c. hot distilled water and filter the solution while hot into the warm soap solution, stirring constantly. When the precipitate which has formed has separated decant the liquid and wash the precipitate thoroughly with hot water. Remove the precipitate, let it drain, free from water completely by kneading it on a warm slab, form it into rolls, wrap in paraffin paper and preserve in tightly closed containers.

Emplastrum adhesivum: rubber, cut in small pieces, gm. 20; petrolatum, 20; lead plaster, 960. Melt the rubber at a temperature not exceeding 150°C., add the petrolatum and continue the heat until the rubber is dissolved. Add the lead plaster to the hot mixture, continue the heat until it becomes liquid, then let it cool and stir it until it stiffens.

"The desirability of a formula which will produce a plaster having the adhesive and stable qualities of commercial rubber-plasters is generally recognized. To admit rubber plasters into the U. S. Ph., without giving a formula by which they can be made by the retail pharmacist, would be a decided innovation; something which has not been done in any other class of galenic or pharmaceutical preparations. Besides the vehicle for plasters intended for endermatic and diadermatic uses is of as much importance as is the medicinal agent. The rubber vehicle serves admirably for adhesive or purely epidermatic purposes, but its use for the plasters of the more important groups is certainly, to say the least, of questionable propriety. This

is evident from the fact that the two most important pharmacopœias of recent issue, the British of 1898 and the German of 1900, have not made any attempt in that direction.

To recognize or describe medicated plasters such as belladonna and opium by defining the alkaloidal strength without reference to the particular vehicle employed would be a therapeutic negation. Their value depends not alone upon the amount of medicinally active agents they represent, but upon the character of the vehicle and the appropriateness for the purpose in view."

THE BENZIN OF THE PHARMACOPŒIA.

By E. H. Gane.

The author presented results which show that "cracking" occurs with the lighter petroleum hydrocarbons almost as readily as in the case of the heavier American oils, and said that this explains the difficulty of procuring petroleum ether boiling within narrow limits.

HEAVY OIL OF WINE.

By I. W. Brandel.

The author obtained 18 per cent. of heavy oil of wine from one liter of alcohol and the statement was made that the composition of the heavy oil of wine has not been fully determined.

THE ESTIMATION OF SULPHIDES.

By Rolland H. French.

The author has devised a method for estimating the amount of calcium monosulphide in sulphurated lime, based on the test of the U. S. P.

THE CHEMICAL ANALYSIS OF METHYL AND ETHYL ALCOHOLIC MIXTURES.

By L. D. Haigh. Reported by A. B. Prescott.

The author has devised the following test for detecting methyl alcohol in ethyl alcohol:

After oxidation (by the use of red hot and superficially oxidized copper coil) of the 10 c.c. of diluted alcohol the filtered liquid is boiled in an open test tube until its volume is 5 or 6 c.c. The tube is

cooled and its contents poured into a porcelain crucible or small evaporating dish. Five drops of phloroglucinol reagent are added from a pipette, when if methyl alcohol is present in the alcohol tested, even if but one part in twenty, the liquid acquires a bright red color, which persists for two or three minutes. If ethyl alcohol is present a faint reddish color at once appears, but fades away rapidly.

The distinction is more clearly seen if the two cases are carried through the operation side by side, one with the mixed alcohols (1 : 10 or 1 : 20), the other with pure ethyl alcohol. After a few trials the operator can tell at once if methyl alcohol be present when the reagent is added. On allowing the two dishes to stand after adding the phloroglucinol, from one-half to one hour, the liquid in the dish which contained formaldehyde fades to a faint and dirty red or orange color. The liquid in the other dish, which contained only acetaldehyde, changes to a blue color.

INFERIOR DRUGS AND INSIDUOUS METHODS OF DECEPTION.

By Lyman F. Kebler.

The author divided adulterations into four classes :

(a) Conventional adulterations are artificial coloring, the coating of ginger, the weighing of cochineal with various products, etc. A method of determining the tinctorial value of cochineal was given.

(b) Accidental adulterations are widespread. Crude drugs usually contain mixtures of foreign matter, such as dirt, stems, twigs, pods, foreign leaves, deteriorated and exhausted material to the extent of 25 per cent. Examples were cited of cocoa leaves, cubeb berries, belladonna leaves, potassium iodide and potassium bisulphate.

(c) Arbitrary adulterations. In order to deal effectively with adulterations it is necessary to adopt some standard. In certain cases it is a minimum one and some manufacturers dilute a superior product so as to comply with such an adopted standard.

(d) Intentional adulterations. The underlying motive for dealings of this character is monetary gain. Examples of this class are mixtures of potassium cyanide and sodium cyanide delivered as potassium cyanide, prime quality drugs mixed with inferior goods and beeswax adulterated with starch.

GERANIUM OIL AND ITS SUBSTITUTES.

By Lyman F. Kebler.

All varieties of geranium oils readily available in this country were purchased as near the source of production as possible. The oils were examined with a view of ascertaining if mixtures of these oils could readily be detected. Twelve samples were secured and the analysis justified the conclusion that a judicious mixer has the chemist at a decided disadvantage.

A NOTE ON SOME NEW REACTIONS FOR ANTIPYRIN AND SALOPHEN.

By George M. Beringer.

The author proposes the following tests:

ANTIPYRIN.—On agitating a small quantity of antipyrin with some solution of chlorinated soda, the odor of the chlorine oxides soon disappears and the liquid slowly acquires an odor like that of essential oil of almonds. Furthermore, on agitating some antipyrin with chlorine water, the color and odor of chlorine promptly disappears and there is formed a copious white amorphous precipitate, evidently a chlorine substitution product.

SALOPHEN:—1 gm. is boiled for one minute with 2 c.c. of solution of sodium hydroxide (1-2) then allowed to cool and 5 c.c. of solution of chlorinated soda added. There is immediately produced a deep and bright green color. After some time this changes to a deep mahogany brown. This change to a brown color takes place slowly in the cold, but more rapidly if the solution is boiled. On supersaturating the solution, either when green or when brown, with a concentrated mineral acid, the color changes to a bright scarlet and then slowly fades to a red orange or mandarin color.

PERSONAL NAME SYNONYMS IN THE U. S. P.

By M. I. Wilbert.

The author gives some interesting and valuable bibliographical data in connection with the personal names that appear as synonyms of galenical preparations in the U. S. P., the following being considered: Basham's mixture, Blaud's pills, Donovan's solution, Dover's powder, Fowler's solution, Glauber's salt, Griffith's mixture, Hoffmann's anodyne, James' powder, Labarraque's solution, Lugol's solution, Monsel's solution, Plummer's pills, Tully's powder and Vallet's mass.

THE ACTION OF OXIDIZING AGENTS, PARTICULARLY POTASSIUM
PERMANGANATE AND IODIC ACID, UPON MORPHINE.

By C. W. Johnson.

Keeping in view the constitution of morphine as adopted by Knorr and others, the author has undertaken an experimental study of certain of its oxidation reactions in order to determine the chemical character and composition of the oxidation products, or any of them, and the limits which govern their formation.

These reactions of oxidation occur in the operation of an important antidote for morphine and in color tests necessary to the identification of the alkaloid. The decisive reactions of morphine, especially in the formation of color compounds, would seem to promise a possible discovery of individual products throwing some light on its chemical composition.

This has consequently been one of the objects of the investigation. In establishing fixed limits for the reactions of oxidation, the immediate object has been to obtain the advantage of a knowledge of these limits in the use of oxidation antidotes, and in the analytical tests of identification.

RESIN OF *PODOPHYLLUM* U. S. P. OR *PODOPHYLLIN*.

By Herman J. Lohmann.

Inasmuch as resin of *podophyllum* is not found in the fresh drug, developing apparently by reaction among the constituents of the drug during seasoning of two years, and as the drug collected before blossoming produces the greatest yield, it would be well for the U. S. P. to specify these conditions in connection with *podophyllum*.

Furthermore, as the yellowish-green or greenish-yellow resin of *podophyllum* does not comply with the tests prescribed, and the light-brown resin does comply with the tests; the descriptive terms, "yellowish-green or greenish-yellow," should be eliminated from the U. S. P.

It is only fair to state that an aluminum salt is part of the resin which offers resistance to the solvents. The author finally admonishes against the use of the yellow resin of *podophyllum*.

OTHER PAPERS.

Other papers were received as follows: "Uses of Carbon Tetrachloride;" "Tests for Purity of Carbon Tetrachloride;" and "Tests for the Detection of Carbon Tetrachloride," by Otto Raubenheimer; "Iron Peptonate," by Leonard A. Johnson; "Preliminary Report on Assay of Sanguinaria," by Walter H. Blome; "Chemical and Physical Constants of Oil of Datura Stramonium," by Julian W. Baird and Flora E. Sleeper; "The Early History and Modern Commercial Development of Mint," by Albert M. Todd; "The Structure of the Stem, Root and Leaves of *Eschscholtzia Californica*," by R. H. Denniston; "The Chemistry of Chelidonium," by J. O. Schlotterbeck and H. C. Watkins; "Microchemical Differentiation of Atropine and Hyoscyamine," by J. O. Schlotterbeck; "Contribution to the Chemistry of Sanguinarine and Chelerythrine," by R. Fischer and A. E. Kundert; "On Glycerophosphoric Acid and Glycerophosphates," by F. Rabak and Ed. Kremers; "Sesquiterpenes," by O. Schreiner; "On the Alkaloids of *Corydalis canadensis* and *C. bicocolla*," by R. Fischer and C. Lehman.

SECTION ON EDUCATION AND LEGISLATION.

The section on education and legislation convened on Friday morning with J. W. T. Knox, chairman, in the chair. The address of the chairman was devoted to the consideration of the more important problems of education and legislation. He stated among other things that there were some 80 schools and colleges of pharmacy in this country at the present time and that there had been an increase of about 35 per cent. in the past three years. He said pharmacy, however, suffers not so much from the number of its students as from their deficiency in preliminary education, and this is more or less directly traceable to the surplus of colleges with which we are afflicted. The attempt is being made, in all good faith, to adopt a uniform entrance requirement so that the young man who presents himself for admission to a pharmacy school must show a high-school diploma or its equivalent before he can become a student.

The report of the secretary, Harry B. Mason, showed that there are now about 92,459 registered pharmacists in the United States, and 8,799 assistant pharmacists. During the year 4,262 persons were granted certificates of registration as pharmacists; of these

3,171, or 74 per cent., passed the examination; in 522 cases (or 12 per cent.), graduation in pharmacy was accepted in lieu of the examination; in 99 cases (or 2.3 per cent.) graduation in medicine was similarly accepted; and interchange of Board certificates accounts for nearly all of the remaining 470 cases. Concerning assistant pharmacists, 1,143 were registered by examination and 70 without examination during the year. So far as the statistics go, they indicate the presence of but 722 women among nearly one hundred thousand registered pharmacists in the country.

F. E. Stewart, who was appointed as a committee of one for the purpose of transmitting the views of the American Pharmaceutical Association on the subject of patents and trademarks to the Congress of the U. S. of America, presented a report to the effect that he had attended the meetings of the Commission appointed by President McKinley to revise the U.S. patent and trademark laws, and that the Commission ignored the wishes of this Association in its recommendations to Congress. The wishes of the Association (as expressed in Proc. A. Ph. A., 1897, p. 90; and 1899, p. 344) being to the effect that Congress shall so revise the patent law as to exclude materia medica products from patent protection, and so revise the trademark law that the currently used names of materia medica products shall be refused registration.

The special committee on "The Acquirement of Drug Habits" presented a report through the chairman, E. G. Eberle, which will be printed in full in a later issue of this JOURNAL.

J. H. Beal presented a draft of a law to provide against the evils resulting from the traffic in certain narcotic drugs and to regulate the sale thereof. The sections were considered *seriatim* and finally adopted.

The following officers were elected: Harry B. Mason, chairman; W. L. Cliffe, secretary; Frederick T. Gordon, D. F. Jones and E. J. Kennedy, associates.

The following papers were presented to this section:

A CONFERENCE OF BOARD OF PHARMACY MEMBERS.

By H. M. Whelpley.

The author recommended the appointment of a committee to call a conference of the various Board of Pharmacy members present this year and with the new officers of this section arrange for a

special session of Board of Pharmacy members at the section meeting of the A. Ph. A. in 1904. The following committee was appointed: George Reimann, chairman; George W. Voss, W. L. Cliffe, D. F. Jones and Fletcher Howard.

**"HIGH CLASS DRUGGISTS," OR THE PRIVILEGE AND DUTY OF
THE PHARMACIST.**

By C. S. N. Hallberg,

The author referred to the scurrilous innuendos in the daily press recently, prompted by degenerate patent medicine advertisers on the subject of substitution by the pharmacist, and asked: "How can pharmacists be regarded as professional men unless they resent such unscrupulous methods of degenerate patent medicine advertisers? Let us remember the advice of the chief executive, 'Learn not to hit, but if you must hit, hit hard.'"

PLANT ANALYSIS AS PART OF THE PHARMACY COURSE.

By L. E. Sayre.

The author in continuing the paper presented last year gave an outline of a course in plant analysis to be incorporated as a part of the regular pharmacy course.

FROM STRENGTH TO STRENGTH.

By Ralph B. Gable.

In an interesting and readable paper, which might be profitably sent to every pharmacist in the United States, the author advocates increasing the membership of the A. Ph. A. by the use of a series of special mailing cards. The paper was referred to the committee on general membership, and C. A. Mayo moved that the committee on membership be made a reception committee also; this motion being finally adopted by the Association at the general session.

INCREASING THE MEMBERSHIP AND INFLUENCE OF THE A. PH. A.

By Frederick T. Gordon.

The author suggested the formation of local sections as in the American Chemical Society. The paper aroused considerable discussion and Caswell A. Mayo moved the appointment of a

committee to consider the organization of local associations, which motion was carried and also adopted at the last general session of the Association.

LINES ON WHICH PHARMACY LAWS SHOULD BE DRAFTED.

By Albert E. Ebert.

The author suggests that the supervision of the State should extend primarily and principally to the store itself; the owner or manager thereof being held personally responsible for the acts of his employees, should be allowed greater latitude in their selection, and registration should be required only of him. Restriction of the examination to those only who are candidates for ownership or managership would greatly reduce the number of applicants for examination and would enable the examiners to more thoroughly inquire into their competency and trustworthiness.

ON THE PROBLEM OF PROPRIETARY AND TRADE NAMES.

By M. I. Wilbert.

The author discusses the nuisance arising from the self-evident right of the manufacturer to coin convenient, short and easily remembered names of so-called new remedies, and the fact that the medical and pharmaceutical professions are being overwhelmed with a multitude of meaningless and, in many cases, misleading names. Many of these names are dangerously similar, and are likely to lead to serious misunderstanding and possibly fatal mistakes. The injustice to the public, as well as the pharmacist, is evidenced by the unnecessary duplication of names and titles for substances or mixtures that are not themselves covered by patents.

PRACTICAL EDUCATION.

By John F. Patton.

The author says that however we may differ about methods of education, we will all agree that that course of training which best fits a man to serve his fellow-men in any special calling is the one most earnestly to be sought. It has been said that the end of education is life, and the object of life is service. As compensation is the reward paid to service, the higher the service the greater the compensation.

"Knowledge is power," but it is an utterly useless asset unless employed for some one's benefit. Usefulness then is the basis upon which our claim for existence must be founded, and all education that tends to this end may be regarded as practical.

MAKING A PROFESSION BY LAW.

By W. R. Ogier.

The author states that real progress toward fixed ideals is a tedious and oftentimes painful process; that the development of the art of pharmacy is only fairly begun; that the A. Ph. A. is as yet the only organized representative body on the continent which is laboring for the scientific advancement of pharmacy; that boards of pharmacy and educators in pharmacy are still engaged in pioneer work; that the higher standards are to be reached through the evolutionary methods, an evolution which must begin with the people, and through them affect their representatives in legislative assemblies. In addition to this there must be a revolution in the minds of those men engaged in the art of pharmacy as to the necessity for the broader training of their assistants, and last but not least a revolution in existing methods whereby pharmacy has been made a department of bazaar shops.

Until these or some of these conditions are realized it is folly to argue for such lofty requirements as will impede rather than advance the progress of pharmacy toward what we must hope is to be its ultimate goal.

OTHER PAPERS.

The following papers were also received: "Drug Legislation," by W. D. Bigelow; "Necessity of Legislature Controlling the Sale of Narcotics," by Gustav Wolff; "Reciprocity and Pharmaceutical Legislation," by Gustav Wolff; "A Step Toward Interstate Registration," by W. A. Dawson; "Union Examinations," by Joseph Feil; "Pharmaceutical Education and Legislation," by A. J. Eckstein.

SECTION ON PRACTICAL PHARMACY AND DISPENSING.

This section convened on Thursday morning with George M. Beringer, chairman, presiding. The chairman's address was devoted in the main to "the cry of substitution," in which he reviewed the

recent newspaper criticisms on substitution in the drug business. He pointed out that instead of holding the retail pharmacist responsible for the impurity of phenacetin and similar products, we should endeavor to learn the origin of such adulteration where it exists. The chairman wisely stated that "the Association should most positively place its stamp of disapproval upon all forms of substitution and with equal positiveness against sensational and uncalled-for attacks and unseemly advertisements reflecting upon the morality and standing of the pharmacists as a body."

The chairman appointed the following committee on Enno Sander prize: Lewis C. Hopp, Charles Holzhauer and Leo Eliel. C. Louis Diehl, chairman of the committee on National Formulary, submitted a provisional report and said that the new edition would appear simultaneously with the new U. S. Pharmacopœia. The following officers were elected for the ensuing year: William H. Burke, chairman; Edsel A. Ruddiman, secretary; Jean Gordon, Wm. Mittelbach and D. F. Jones, associates.

Mr. Ebert exhibited a duplex almond grater as being useful in grating opium after it has been dried and cut in pieces. George F. Payne exhibited a so-called "bottle dropper" for prescription work. The following papers were presented:

A PERMANENT SYRUP OF HYDRIODIC ACID.

By Otto Raubenheimer.

The author proposed the following formula: Potassium iodide, 16.6 gm.; potassium hypophosphite, 0.5 gm.; glycerin, 125.0 c.c.; aqua destillata, 50 c.c. Dissolve in a 250 c.c. prescription bottle and add to it the following solution: acid tartaric, 15.0 gm.; and alcohol dilute 50.0 c.c. Mix and put on ice or in ice water for two or three hours. Meanwhile prepare in either hot or cold way a syrup of white rock candy 500.0; and aqua destillata q. s. ad. 700.0 c.c. Strain through flannel. If prepared warm the syrup must be cooled. Into this syrup, by means of a long stem and covered glass funnel and a white filter paper, filter the solution of hydriodic acid, being careful to disturb the precipitated potassium bitartrate as little as possible in the bottom of the prescription bottle. After all the liquid is filtered add 25 c.c. of distilled water into the prescription bottle, shake well and pour into the filter. When the liquid is all filtered then remove filter and add of distilled water a sufficient

quantity to make 1000 c.c. Next add a heaping teaspoonful of purified coarse animal charcoal to the syrup, shake well and set aside one or two days, shaking occasionally. Then filter through white filter in a covered funnel.

In the discussion Mr. Ebert said that there was no difficulty in obtaining a pure crushed sugar, or granulated sugar, by paying a little more for it. There was some discussion on the use of glycerin in the syrup, and Mr. Eliel said that there was no difficulty in making a satisfactory preparation according to the U. S. P. formula if the directions were carefully followed and cut loaf sugar used.

A CIRCULATORY APPARATUS FOR MAKING SOLUTIONS OF IODINE.

By M. I. Wilbert.

The author uses a simple circulatory apparatus, made from a wide-mouth bottle and an ordinary test tube. A test tube having an outside diameter of from 2 to 2.5 cm. is to be preferred. This should have from 12 to 15 holes, about one 1 mm. in diameter, in the bottom and lower portion of the side of the tube. The outer diameter of the tube should fit closely the inner side of the neck of the bottle; the tube can then be held at any height by using a heavy rubber band, this at the same time acting as a stopper for the bottle.

For making 200 c.c. of tincture of iodine, 150 c.c. of alcohol are put in the wide-mouth bottle, the rubber band is then adjusted so that the upper row of perforations in the tube are well above the line of the liquid, the necessary amount of iodine is then placed in the tube and the whole apparatus, closely stoppered, is then set aside for from one-half to two hours in a cool dark place. When all the iodine is dissolved, the solution is poured into a graduated flask, or suitable receptacle, the circulatory apparatus is washed out with the remaining portion of the alcohol, and this is then added to the first portion to make up the required amount. For making Lugol's solution, or the U. S. P. test solution of iodine, about three-fourths of the required water is placed in the bottle, the tube adjusted as before; the potassium iodide is then first dissolved, the apparatus well shaken to mix the solution, the iodine added and the apparatus stoppered and set aside. When the iodine is dissolved, the preparation is finished by washing the apparatus with sufficient distilled water to make up the required amount.

This apparatus is, of course, applicable to the making of a number of solutions, particularly of such chemicals as are deteriorated by organic matter or are not readily soluble.

CIRCULATORY DISPLACEMENT AS A PHARMACEUTICAL PROCESS.

By Frank E. Fisk.

The author employs cylindrical displacement jars, preferably of clear glass, and capacity varying from 250 to 2,000 c.c., each of which is provided with a moderately short, slightly tapered cork of good quality, through the center of which, from its under surface, should pass an ordinary screw-eye of such length as to pass through the cork and project above same from one-half to one centimetre. To their thread ends next attach a turned wood handle of inverted pear or other convenient or suitable shape, to facilitate the removal of the cork. To each jar should next be attached a strip of ordinary white paper of good quality extending from the bottom perpendicularly toward the top. Next weigh accurately each jar and note the result in grammes on margin of label (representing the tare of same), and proceed to graduate the jar by carefully weighing and measuring, indicating by means of long and short, heavy and light lines, the liters and grammes and divisions and multiples of same, and then coat surface of label with collodion to prevent erasure, and having provided each with several cylindrical shaped bags of muslin, gauze, bolting cloth, flannel, etc., of suitable diameters and of varying capacities, with strings of sufficient length to allow of their complete immersion in the liquid after closing the same, the utensils are complete.

The following are some of the preparations that may be conveniently and economically made by circulatory displacement. Prominent among these may be mentioned *Mucilago Acaciæ U. S.*, the granular or coarsely comminuted drug being conveniently washed as required by the *Pharmacopœia* in the gauze bag, placed in the jar provided with the proper quantity of water, and after the requisite length of time, the removal and spiral twisting of the bag, the mucilage is finished in a cleanly manner, with economy of time and labor.

Syrupus Allii, *Syrupus Althæææ*, and many others of the list of syrups may with equal propriety be thus prepared, while as a matter of fact there is scarcely a class of galenical liquids which does not contain one or more preparations that may be advantageously made

by this method, though it is to the list of alcoholic and hydro-alcoholic and aqueous solutions of gums, gum-resins, and balsamic substances that we are to look for its special field of usefulness as in the making of the tincture of benzoin, tincture tolu, tr. aloes, tr. kino, the tinctures guaiac and ammoniated tincture of guaiac, infusions, etc.

SOLUBLE IODINE.

By M. I. Wilbert.

A two per cent. solution of iodine in alcohol with the addition of a minute quantity of ammonium iodide or sodium biborate gives a solution that is miscible in all proportions with water; when diluted with 50 or 60 parts of water, as directed by the makers of a somewhat similar proprietary article, that is being widely advertised, it produces an aqueous solution of iodine that is not unpleasant to the taste.

It is quite possible that iodine, in minute doses, well diluted with water, may constitute an ideal method for securing the medicinal action of this drug, without causing the disagreeable gastric symptoms so frequently resulting from the administration of the iodides in large doses. At all events, it is a point well worth bringing to the attention of physicians who would be likely to give it a trial.

METHYL ALCOHOL.

By H. A. B. Dunning.

The author states that experiments tend to show that methyl alcohol is poisonous in all cases and should not be used in any preparations, but if used by manufacturers in making preparations for external use these should have a poison label.

SOME INCOMPATIBILITIES OF A FEW OF THE NEWER REMEDIES.

By Edsel A. Ruddiman.

The author considered incompatibilities with agurin, alumnol, ammonol, diuretin, euophen, heroin, ichthyol, phenocoll hydrochloride, piperazin, protargol and salophen.

SAPON MOLLIS AND LINIMENTUM SAPONIS MOLLIS.

By George M. Beringer.

The author proposes the following formula: Linseed oil, 40 gms.; Malaga olive oil, 40 gms.; potassa, 19 gms.; alcohol, 10 cc.; water,

60 cc. Warm the mixed oils on the water bath to 70° C.; dissolve the potassa in the water and warm this also to 70° C. and add this to the oils and stir thoroughly. Now add the alcohol, and as soon as this is thoroughly incorporated stop stirring. Continue the heat at this temperature for a short time until saponification is complete, which is evidenced by the mass becoming clear and a portion dissolving in boiling water or alcohol without the separation of oil globules. If the above directions are followed, the resulting soap is an almost transparent, smooth, greenish-yellow mass, but if stirring is continued after the addition of the alcohol until the saponification is completely effected, then the resulting soap is opaque from included air.

SAFETY BENZIN.

By Otto Raubenheimer.

The author recommends a mixture of one volume of benzin and two volumes of carbon tetrachloride.

PRACTICAL DISPENSING NOTES.

By Lewis C. Hopp.

The author gave some notes on the filling of capsules and exhibited a suppository mold weighing seven pounds which, he said, furnished the advantage of thoroughly chilling the suppositories. He also exhibited an apparatus for mixing and sifting powders.

OTHER PAPERS.

Several papers were read by title: "Waste and How to Prevent It," by Wm. Mittelbach; "Pharmaceutical Fragments," by W. W. Kerr; "Incompatibility in a Prescription for Pills," by E. Fullerton Cook.

HISTORICAL COMMITTEE.

An entire evening (Tuesday) was devoted to the work of the Historical Committee. The chairman, Edward Kremers, presented an elaborate report outlining the plan of work proposed by the committee. He said that the interest manifested at the Philadelphia meeting, in the history of American pharmacy, caused some of the members to consider the desirability of perpetuating this interest. It was thought desirable at first to appoint a committee, and if successful the committee might later be transformed into a section.

The resolution creating this committee is as follows: "Moved by the Council to recommend to the Association that a standing committee on historical pharmacy be established, to hold one public meeting annually, the committee to consist of a chairman and secretary to be named by the President of the Association, and such members of the Association as the chairman of the committee may select."

It is proposed to divide the work among a number of sub-committees, and the chairman gave suggestions concerning the work to be undertaken by each of these committees, some of which are herewith given:

The work of the first sub-committee, viz., the one on Retail Druggists and Drug Stores, is at present possibly the most important. It is hoped eventually that the men selected for this committee be men capable of arousing State interest in the history of their calling.

The work of the Historical Committee of the Wisconsin Pharmaceutical Association was referred to, and it was stated that the principal object of the committee is to secure material for an historical drug store, representing the period 1848-1898. Similar collections are being made in Michigan and Iowa. Another feature of the work in Wisconsin is the publication between two covers of everything pertaining to the pharmacy of one State, this being embodied in the *Badger Pharmacist*, published by the pharmacy students of Wisconsin University.

One additional thought should find expression at this time: Should the dream of some of us, viz., a national pharmaceutical museum and library at Washington, ever be realized, these State collections, if properly looked after now, will become the proper feeders of our national museum in the future.

In regard to the work of the sub-committee on Local Associations, the chairman said that Mr. Ebert of the Veteran Druggists' Association of Chicago, has set an example in showing what interesting results can be accomplished by studying files of newspapers and by correspondence. The history of State associations should be carefully written up, not from the memory of individuals, but from documents.

A single question may serve as a suggestion for the work of the sub-committee on National Associations of Retail Druggists:

"When and by whom are complete files of the proceedings and transactions of the several national associations of retail druggists kept, so that they can be consulted by a student of pharmaceutical economy?"

In regard to the work of the sub-committee on Wholesale Druggists, he said: What we need is a history of each individual firm, past as well as present, and then a history of the wholesale drug business as such can be written, but not before.

Of the sub-committee on Manufacturers, it was stated that while it was true that the manufacturer is unwilling to make public much of his legitimate private information, he might be asked to preserve documents, and turn them over to a national museum when he has no further use for them; catalogues, price-lists and even bills could be contributed for this purpose.

It was pointed out in regard to State Boards that there is no complete collection of the reports of the numerous State Boards of this country. They certainly should be collected. A systematic study of their examination questions and of the educational history of the men who compose these boards are specially to be desired.

The sub-committee on Adulterations might make collections of adulterated drugs and chemicals. The immediate cause of the organization of the A. Ph. A. was the poor quantity of drugs and chemicals imported.

Of the work of the sub-committee on Literature and Libraries he said: While we need more well equipped college libraries to serve local interests, we need a national pharmaceutical library. A pharmaceutical department in the medical library of the Army and Navy cannot satisfy us. It is not impossible that the Lloyd Library may some day become a national institute. If we desire to see it such, we should do something more than merely sit by and calmly observe the development of things.

As indicating the importance of the work of the sub-committee on Drugs and Medicinal Plants it was pointed out that the discovery of a New World created an interest on the part of the inhabitants of the Old in the medical plants of the western continent and the drugs derived therefrom. At the time of the celebration of the four-hundredth anniversary of the discovery of America, it was a German scientist who wrote a book on the history of American Drugs and their significance in modern materia medica. It would

be valuable to collate the history of the numerous individual attempts to cultivate drugs.

In regard to the work of the sub-committee on Education he said we need in addition to the papers and compilations, files of catalogues from colleges and schools. Old lecture note books, accounts of individuals while at college, contributions of old diplomas, matriculation cards, etc., call for the activity of others than college professors.

The chairman said at present the principal work will be that of collecting material, and little more than this can be done and done well. He also reported that the Lloyd Library is willing to cooperate with the A. Ph. A. in the collection of such documentary material. It was suggested that the housing of such documentary material for the present be in the Lloyd Library. Other objects of historic interest had best be housed in connection with State historical collections. When we are ready for a national pharmaceutical museum we can call upon these State repositories for their contributions.

In conclusion he called attention to the impetus which the study of pharmaceutical history has received everywhere in connection with a similar interest that is spreading even more rapidly in the related profession of medicine. "May the movement started at our semi-centennial meeting grow to such an extent that its influence will be felt throughout every province and State of this North American continent. Nothing will serve better to offset the present commercial tendency which manifests itself in pharmacy to-day, not only in this country but everywhere. It would be useless to deplore this tendency, but we ought to be mindful of the introduction of such other tendencies that will assure us of a more harmonious development of that calling which we all love and to which we are devoting our lives."

The following papers were received: "Daniel B. Smith, the first President of the A. Ph. A.," by M. I. Wilbert; "Historical Sketch of the Chicago College of Pharmacy," by Albert E. Ebert; "Silas H. Douglas as Professor of Chemistry and Pharmacy before the Establishment of a School of Pharmacy in Michigan," by Albert B. Prescott; "History of Echinacea Angustifolia," by J. U. Lloyd; "Detroit's First Pharmacy," by H. B. Mason; "Justus von Liebig," by Wm. C. Alpers; "Gastric Digestion and William Beaumont," and

"Professor Wm. Procter's Prescription File, 1847-1848," by H. M. Whelpley; "Death and Dr. Hornbrook," and "Justus von Liebig," by Ed. Kremers; "Early Pharmacy in New France," by Ed. Kremers and Helen Sherman.

SECTION ON COMMERCIAL INTERESTS.

The meeting of the section on Commercial Interests was held on Tuesday afternoon with Thomas V. Wooten, the chairman, in the chair. The address of the chairman was read, and gave rise to an interesting discussion. The paragraphs of Mr. Wooten's address that occasioned considerable comment were:

"Recognition of the necessity of doing a larger volume of business has induced some pharmacists to deliberately take up price cutting as a means of accomplishing the desired object. It is not to be denied that in those rare instances where the cutter's methods are not immediately adopted by his druggist-neighbors (who generally outdo him in giving away profits), this plan succeeds for the individual druggist who inaugurates it. But is not this success gained at ruinous cost to the great body of those engaged in our calling, and is that *true* success which consigns our brother craftsmen (as deserving of success as we) to partial if not complete failure in order that we may profit thereby? It ought to be laid upon the conscience of the American Pharmaceutical Association to condemn the practice of demoralizing prices, when this is done for the specific purpose of gaining an advantage over one's fellow pharmacists, as utterly wrong in principle and wholly subversive of the association spirit."

"In studying the subject of the Association's duty to commercial pharmacy, I have been struck with the richness of this field of usefulness, as well as the fewness of those engaged in converting the rich ore of opportunity into the coin of common advantage. What we need—what we must have if the A. Ph. A. means to fulfill its whole mission—is a greater number of workers in this field—unselfish men willing to devote their time and talents that the welfare of all may be advanced. To this end pains should be taken to publish near and far, by means of facts, not words alone, that the Association is not more interested in the work of *any other section* than in that of the section on Commercial Interests, and that it earnestly desires to make, and intends to make, this section serve to the fullest extent possible the interests of every retail pharmacist in America."

In concluding his address, Mr. Wooten presented the following resolutions, which were considered and adopted not only by the section but by the Association at the final session. The resolution advocating the establishment of commercial training courses in Colleges of Pharmacy furnished the topic for the greatest amount of discussion.

Resolved, That it is the sense of the Association that retail pharmacists will advance their individual interests and the interests of pharmacy as a whole by making the working hours of clerks as few as possible consistent with the proper conduct of their respective stores, also by providing clerks with healthful sleeping quarters and by liberality in the matter of compensation, the end sought being to bring into the profession of pharmacy a greater number of capable and ambitious young men who will otherwise be deterred from entering it.

Resolved, That it is the sense of the Association that the several schools of pharmacy ought to include in their curricula a course of commercial training comprehensive enough to insure that the student is fully capable of properly managing a retail drug business, the passing of a satisfactory examination in this branch being a prerequisite to graduation.

Resolved, That it is the sense of the Association that retail pharmacists will greatly increase their prospects of success as business and professional men by inaugurating occasional conferences between their respective local organizations (of which there ought to be one in every community) and the physicians of their localities, in which conference there are brought up for discussion the relations of the physician and pharmacist to each other and of both to the public, it being confidently believed such conferences will benefit all concerned.

Resolved, That it is the sense of the American Pharmaceutical Association that price cutting on proprietary and other goods, inaugurated and carried on for the specific purpose of gaining an advantage over one's fellow pharmacists, is wrong in principle and subversive of the association spirit, to foster which spirit the Association was formed.

Resolved, That this organization deprecates the feeling said to exist in some quarters that the American Pharmaceutical Association is not in as hearty accord as it should be with the efforts which the retail pharmacists of the country are putting forth individually and collectively to improve their financial status.

Resolved, That the Association heartily commends all such endeavors and cordially urges upon pharmacists the desirability of identifying themselves closely with their respective local and State organizations, the National Association of Retail Druggists and the American Pharmaceutical Association, the commercial section of which devotes itself exclusively to subjects of vital interest to those engaged in conducting retail drug stores.

A number of papers of a practical nature were presented which were well received and caused considerable discussion: Ralph B. Gable presented a paper on "A Useful but Neglected Servant", in

which he referred to advertising through the use of show window placards and gave methods for making these cards. He said that patience and practice will enable the druggist to write attractive and effective placards.

A. B. Raines sent a paper on "The Reduction of the Tax on Alcohol," which was read by the secretary, in which he contended that the reduction would not be to the commercial interests of the pharmacist. He contended that a reduction in price of alcohol meant a reduction of the price of products made from it as a menstruum, and stated that as the taxes on other products have been reduced so have the prices of the finished article. He said that the diamond dealer is benefited in his business because diamonds are high priced. Mr. Meissner, however, stated that he doubted if a tincture selling at five cents an ounce would suffer any reduction in selling price, as the proposed reduction was a comparatively small one.

Mr. Mittlebach read a paper on "Commercial Training and Apprentices," in which he pointed out the responsibilities of the preceptor in the training of the apprentice. The paper was discussed by Messrs. Sherman, Burke and McIntyre.

W. H. Burke presented a paper on "Progress of Pharmacy," in which he compared the present conditions of pharmacy with those some years ago.

The election of officers for the section resulted in the choice of W. L. Dewoody, of Pine Bluff, Ark., as chairman; Robert C. Reilly, St. Louis, secretary; and E. M. Boring, Philadelphia, Chas. R. Roth, Canton, O., and Chas. R. Sherman, Omaha, as associate members of the committee of the section.

A COLLEGE HOUSE for the use of students of the Philadelphia College of Pharmacy has recently been secured by the joint committee of the Board of Trustees and Alumni Association. The house is located at 1913 Arch Street, and contains on the first floor parlor, reception and toilet-rooms, also a dining-room and two kitchens. On the second, third and fourth floors there are twenty-six sleeping-rooms. Students will use their rooms for study, but on the first floor a reading-room and recreation-room will be provided, with a piano, and every effort will be made to establish and promote home life with attractive surroundings.

It is especially desired that present or prospective Philadelphia College of Pharmacy students communicate with the Actuary of the College at 145 North Tenth Street and get fuller and further particulars.